

CLAIMS

What is claimed is:

1. A vehicle access system, comprising:

a frame including opposite first and second sides extending between an inboard end and an outboard end;

a transfer member movably supported by the frame, the transfer member having an inboard end and an opposite outboard end;

a first drive assembly positioned adjacent the first side of the frame;

a second drive assembly positioned adjacent the second side of the frame;

a linking member extending between and connecting the first drive assembly and the second drive assembly; and

a control assembly engageable to at least one of the linking member, the first drive assembly and the second drive assembly, wherein the first drive assembly and the second drive assembly are operable simultaneously to move the transfer member with respect to the frame between a stowed position whereby the transfer member is positioned substantially in the frame and a deployed position whereby the transfer member extends outwardly from the frame.

2. The system of claim 1, wherein the transfer member is manually movable between the deployed and stowed positions when the control assembly is disengaged from the one of the linking member, the first drive assembly and the second drive assembly.

3. The system of claim 1, wherein:

the first drive assembly includes a first chain mounted to the frame and a first motor coupled to the first chain, the first chain being fixed and the first motor being movable along the first chain when the control member is engaged; and

the second drive assembly includes a second chain mounted to the frame and a second motor coupled to the second chain, the second chain being fixed and the second motor being movable along the second chain when the control member is engaged.

4. The system of claim 3, wherein the linking member includes a chain extending between and connecting the first drive assembly and the second drive assembly.

5. The system of claim 4, further comprising;

a first double sprocket connecting the first chain of the first drive assembly and the chain of the linking member; and

a second double sprocket connecting the second chain of the second drive assembly and the chain of the linking member.

6. The system of claim 5, wherein the control assembly includes a locking member selectively engageable to one the first and second double sprockets.

7. The system of claim 1, wherein:

the first drive assembly includes a first outboard sprocket, a first inboard sprocket, and a first double sprocket; and

the second drive assembly includes a second outboard sprocket, a second inboard sprocket, a reversing sprocket, and a second double sprocket between the second inboard sprocket and the reversing sprocket; and

the linking member is connected to the first double sprocket and the second double sprocket.

8. The system of claim 1, wherein the linking member includes a chain extending between and connecting the first drive assembly and the second drive assembly.

9. The system of claim 1, further comprising a carriage attached to the inboard end of the transfer member and movable in the frame therewith, wherein the first drive assembly includes a first motor and the second drive assembly includes a second motor, the first motor and the second motor mounted in the carriage.

10. The system of claim 9, wherein:
the first drive assembly includes a first horizontal chain loop mounted to the frame with the first motor coupled thereto, the first horizontal chain loop being fixed and the first motor being movable along the first horizontal chain loop when the control member is engaged; and

the second drive assembly includes a second horizontal chain loop mounted to the frame with the second motor coupled thereto, the second horizontal chain loop being fixed and the second motor being movable along the second horizontal chain loop when the control member is engaged.

11. The system of claim 1, further comprising means for raising the inboard end of the transfer member when the transfer member is in the deployed position.

12. The system of claim 11, further comprising a carriage movable in the frame and attached to the inboard end of the transfer member, wherein the means for raising includes a rocker assembly pivotally attached to and extending between an outboard end of the carriage and the inboard end of the transfer member.

13. A vehicle access system, comprising:

a frame including opposite first and second sides extending between an inboard end and an outboard end;

a transfer member movably mounted to the frame, the transfer member having an inboard end and an opposite outboard end;

a first drive assembly positioned along the first side of the frame, the first drive assembly including a first chain and a first motor coupled to the first chain;

a second drive assembly positioned along the second side of the frame, the second drive assembly including a second chain and a second motor coupled to the second chain;
and

a linking member connected between the first drive assembly and the second drive assembly, wherein the first drive assembly and the second drive assembly are operable simultaneously to move the transfer member with respect to the frame between a stowed position whereby the transfer member is positioned substantially in the frame and an deployed position whereby the transfer member extends outwardly from the frame.

14. The system of claim 13, further comprising a control assembly selectively engageable to one of the linking member, the first drive assembly and the second drive assembly.

15. The system of claim 14, wherein the transfer member is manually movable between the deployed position and the stowed position when the control assembly is not selectively engaged to the one of the linking member, the first drive assembly and the second drive assembly.

16. The system of claim 14, wherein the first motor is movable along the first chain and the second motor is movable along the second chain to move the transfer member between the deployed and stowed positions when the control member is selectively engaged to the one of the linking member, the first drive assembly and the second drive assembly.

17. The system of claim 13, wherein the first chain forms a first loop and the second chain forms a second loop, the first loop and the second loop being oriented parallel to the transfer member.

18. The system of claim 13, wherein the linking member includes a chain extending along the inboard end of the frame and connecting the first drive assembly and the second drive assembly.

19. A vehicle access system, comprising:

- a frame mounted to the vehicle, the frame including opposite first and second sides extending between an inboard end and an outboard end;
- a transfer member movably mounted to the frame, the transfer member having an inboard end and an opposite outboard end;
- a first drive assembly positioned towards the first side of the frame;
- a second drive assembly positioned towards the second side of the frame; and
- a linking member extending along the inboard end of the frame and connecting the first drive assembly and the second drive assembly to maintain the first and second drive assemblies simultaneously in one of a manual mode or an automatic mode.

20. The system of claim 19, wherein when in the automatic mode the transfer member is movable with respect to the frame by the first and second drive assemblies between a stowed position whereby the transfer member is positioned substantially in the

vehicle and a deployed position whereby the transfer member extends outwardly from the vehicle.

21. The system of claim 19, wherein the transfer member has a central axis extending between the inboard end and the outboard end of the transfer member and the first drive assembly and the second drive assembly are each spaced a substantially equal distance from the central axis.

22. The system of claim 19, further comprising a control assembly selectively engageable to one of the first drive assembly, the second drive assembly and the chain, wherein:

the first drive assembly includes a first drive chain mounted to the frame and a first motor coupled to the first drive chain, the first drive chain being fixed and the first motor being movable along the first drive chain when the control assembly is engaged to one of the first drive assembly, the second drive assembly and the chain; and

the second drive assembly includes a second drive chain mounted to the frame and a second motor coupled to the second drive chain, the second drive chain being fixed and the second motor being movable along the second chain drive when the control assembly is engaged to the one of the first drive assembly, the second drive assembly and the chain.

23. The system of claim 22, further comprising;

a first double sprocket connecting the first drive chain and the linking member;
and
a second double sprocket connecting the second drive chain and the linking member.

24. A vehicle access system, comprising:
a frame;
a first drive assembly attached to the transfer member and attached to the frame,
the first drive assembly comprising:
a first chain forming a first substantially horizontal loop about a first plurality of sprockets; and
a first motor engaging a portion of the first chain;
a second drive assembly attached to the transfer member and attached to the frame, the second drive assembly comprising:
a second chain forming a second substantially horizontal loop about a second plurality of sprockets; and
a second motor engaging a portion of the second chain;
a linking member interconnecting the first drive assembly and the second drive assembly; and
a control assembly selectively engageable to one of the first drive assembly, the second drive assembly and the linking member, wherein the first drive assembly and the second drive assembly are operable simultaneously to move the transfer member with respect to the frame between a stowed position whereby the transfer member is positioned

substantially in the frame and a deployed position whereby the transfer member extends outwardly from the frame.

25. The system of claim 24, wherein:

the first motor moves along the first chain to move the transfer member when the control assembly is engaged; and

the second motor moves along the second chain to move the transfer member when the control assembly is engaged.

26. The system of claim 24, wherein the first chain rotates about the first plurality of sprockets and the second chain rotates about the second plurality of sprockets for manual movement of the transfer member between the stowed position and the deployed position when the control assembly is disengaged.

27. The system of claim 24, wherein the linking member is a third chain forming a third substantially horizontal loop connected with one of the first plurality of sprockets and one of the second plurality of sprockets at an inboard end of the frame.